

WHAT IS CLAIMED IS:

1. An organic light emitting diode (OLED) display, comprising:  
a back panel;

a front panel substantially parallel to the back panel;  
an array of OLED pixels positioned between the front  
panel and the back panel; and

a plurality of thermally conductive elements positioned  
between the OLED pixels and the back panel and  
distributed throughout the array of OLED pixels, the  
thermally conductive elements provide a path of low  
thermal resistance from the OLED pixels to the back  
panel.

2. The display of claim 1, wherein each OLED pixel comprises a  
plurality of OLED sub-pixel regions that emit different  
colors of light.

3. The display of claim 1, wherein the thermally conductive  
elements comprise solder joints.

4. The display of claim 3, wherein there is at least one  
solder joint positioned between each OLED pixel and the  
back panel.

5. The display of claim 4, wherein:  
each OLED pixel has at least one cathode contact; and  
a solder joint for each OLED pixel on the cathode contact  
between the OLED pixel and the back panel.

6. The display of claim 5, wherein:  
each OLED pixel has at least one anode contact; and

a solder joint for each OLED pixel on the anode contact between the anode contact and the back panel.

7. The display of claim 6, wherein at least a portion of the solder joints conducts electrical current to the OLED pixels.

8. The display of claim 1, wherein the array of OLED pixels is divided into a plurality of subsets of adjacent pixels.

9. The display of claim 8, wherein there is at least one thermally conductive element positioned between each pixel subset and the back panel.

10. The display of claim 9, wherein:  
each pixel subset includes an OLED pixel having at least one cathode contact; and  
a thermally conductive element for each pixel subset on the cathode contact between the pixel subset and the back panel.

11. The display of claim 10, wherein:  
each pixel subset includes an OLED pixel having at least one anode contact; and  
a thermally conductive element for each pixel subset between the anode contact and the back panel.

12. The display of claim 11, wherein at least a portion of the thermally conductive elements conducts electrical current to the OLED pixels.

1 13. The display of claim 1, wherein the back panel comprises  
2 a ceramic material.

1 14. The display of claim 1, further comprising an epoxy  
2 material to affix the front panel to the back panel such  
3 that the epoxy material occupies the space between the  
4 thermally conductive elements.

1 15. The display of claim 1, further comprising a heat fin  
2 coupled to the surface of the back panel opposite to the  
3 front panel.

1 16. The display of claim 15, further comprising a cooling fan  
2 to force airflow over the heat fin.

1 17. An OLED display, comprising:  
2 a back panel;  
3 a front panel substantially parallel to the back panel;  
4 an array of OLED pixels positioned between the front  
5 panel and the back panel, wherein the array of OLED  
6 pixels is divided into a plurality of subsets; and  
7 an array of solder joints distributed throughout the  
8 array of OLED pixels such that at least one solder  
9 joint is positioned between each pixel subset and the  
10 back panel, wherein the solder joints dissipate heat  
11 from the OLED pixels and at least a portion of the  
12 solder joints conduct electrical current to the OLED  
13 pixels.

1 18. The display of claim 17, wherein the back panel comprises  
2 a ceramic material.

1 19. The display of claim 17, wherein each OLED pixel  
2 comprises three OLED sub-pixel regions that emit different  
3 colors of light.

1 20. The display of claim 17, wherein the portion of the  
2 solder joints that conduct electrical current are  
3 electrically connected to at least one back panel  
4 interconnect.

1 21. The display of claim 17, further comprising a heat fin  
2 coupled to the surface of the back panel opposite to the  
3 front panel.

1 22. The display of claim 21, further comprising a cooling fan  
2 to force airflow over the heat fin.

1 23. A method for manufacturing an OLED display, comprising:  
2 providing an array of OLED pixels on a first surface of a  
3 front panel;  
4 forming cathode contacts over at least a portion of the  
5 OLED pixels and distributed throughout the array of  
6 OLED pixels;  
7 forming solder joints on each cathode contact; and  
8 mounting a back panel over the solder joints and  
9 substantially parallel to the front panel so that the  
10 solder joints provide a path of low thermal resistance  
11 from the OLED pixels to the back panel.

1 24. The method of claim 23, wherein each cathode contact is  
2 formed directly over a single OLED pixel.

1 25. The method of claim 23, wherein the solder joints are  
2 formed such that at least a portion solder joints provide  
3 electrical current to the OLED pixels.

1 26. The method of claim 25, wherein the portion solder joints  
2 that provide electrical current to the OLED pixels are  
3 electrically connected to at least one back panel  
4 interconnect.

1 27. The method of claim 23, further comprising forming anode  
2 contacts adjacent to at least a portion of the OLED pixels  
3 such that the anode contacts are evenly distributed  
4 throughout the array of OLED pixels.

1 28. The method of claim 23, further comprising forming solder  
2 joints on each anode contact throughout the array of OLED  
3 pixels.

1 29. The method of claim 23, further comprising filling the  
2 space between the solder joints with an epoxy material to  
3 affix the back panel to the front panel.

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